Southwest Fisheries Science Center
Fourth Quarter Report - FY 2002
For the period July 1–September 30, 2002

Submitted by: John Hunter, Division Director, Fisheries Resources Division

Title of Accomplishment or Milestone: Produce manuscript on 1998–1999 MERRP (marine reserves) cruises.

Current Status: Completed.

Background Information: The California Marine Resources Protection Act of 1990 required the creation of four marine reserves along the California coast to conserve biodiversity and to benefit fishery resources by providing protected spawning habitat, thus providing eggs and larvae to "reseed" fished areas outside the reserves. Subsequently, the California Department of Fish and Game established the Marine Ecological Reserves Research Program (MERRP), administered by the California Sea Grant College Program, to study the new reserves. The 1998–1999 MERRP ichthyoplankton study was undertaken at the two southern reserves, and included comparative sampling at two nearby islands in the Channel Islands National Marine Sanctuary. Directed studies of the distributions and abundances of the planktonic propagules of exploited marine species in reserve vicinities rarely have been undertaken.

Purpose of Activity: To describe the benthic habitat and the fish species at each study site; to determine the taxonomic composition and fine-scale distributions of the nearshore ichthyoplankton at each site; to estimate the potential for the eggs and larvae of commercially or recreationally valuable fishes produced in the reserves to "reseed" adjacent fished areas.

Description of Accomplishment and Significant Results: The areas around the state reserves are mostly soft bottom and the production of eggs and larvae of most shorefishes of fishery value is low, especially at Vandenberg Ecological Reserve. Some soft-bottom fishes (e.g., California halibut) spawn in Big Sycamore Canyon Ecological Reserve but are unlikely to have significant fidelity to that small reserve site surrounded by extensive, similar habitat. Abundances of eggs and larvae of several species of fishery value are high at Anacapa and San Miguel Islands, reflecting the rocky bottom and kelp habitats available there. Results of the study were published (cd-rom) by California Sea Grant College Program, University of California, La Jolla, and a manuscript dealing with the study is in press in *CalCOFI Reports*, volume 43.

Significance of Accomplishment: Results demonstrate that: the methodology is appropriate for conducting investigations of fine-scale ichthyoplankton distributions in nearshore waters; there is a relatively close linkage between habitat type and the abundance and species composition of the ichthyoplankton in these waters; and habitat type is an important consideration in reserve siting.

Problems: None.

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